

REMARKS

Claims 1 to 3 and 5 to 14 are pending in the application, of which claims 1 and 9 are independent.¹ Favorable reconsideration and further examination are respectfully requested.

In the Office Action all of the claims were rejected over U.S. Patent No. 6,680,948 (Majd) in view of U.S. Patent No. 5,940,390 (Berl). As shown above, Applicant has amended the claims to define them with greater particularity. In view of these amendments, withdrawal of the art rejections is respectfully requested.

Amended independent claim 1 defines a method for use in transmission of data packets, where the data packets comprise packet headers that include priority information, and where the priority information identifies the data packets as high priority data packets or as low priority data packets. The method includes transmitting the data packets via at least one of a first transmission line and a second transmission line, where the second transmission line is redundant to first the transmission line. The data packets are transmitted in accordance with Internet Protocol (IP). Transmission includes identifying, in a device, which of the data packets are low priority data packets and which of the data packets are high priority data packets based on the priority information, transmitting the high priority data packets identified by the device via the first transmission line, and transmitting the low priority data packets identified by the device via the second transmission line. The method also includes switching transmission of the high priority data packets from the first transmission line to the second transmission line if there is a problem on the first transmission line, and discarding low priority packets when high priority packets are transmitted via the second transmission line.

¹ The Examiner is urged to independently confirm this recitation of pending claims.

The applied are is not understood to disclose or to suggest the foregoing features of claim

1. In this regard, the Office Action refers to L1 and L2 in Fig. 5 of Majd as redundant transmission lines.² However, links L1 and L2 are not redundant at least because they are not between the same source and destination. Rather, as shown in Fig. 5 (below), L1 is a link between a first network (ISP1) and a boundary router (R3) to an undersea domain, whereas L2 is a link between a second network (ISP2) and the boundary router (R3).

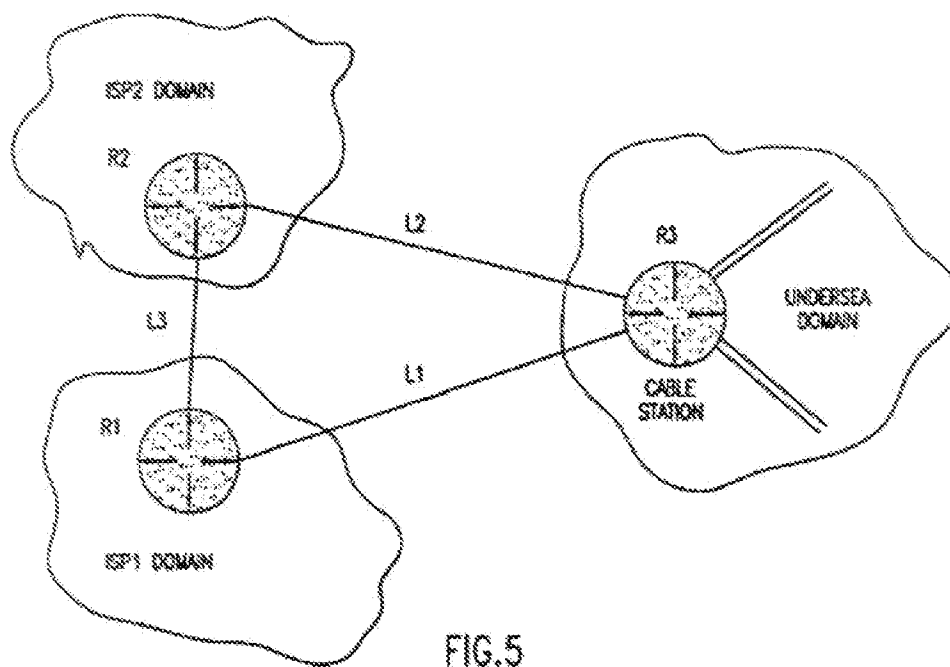


FIG.5

The Office Action appears to be taking the position that L1 and L2 are redundant because router R1 routes packets through link L3 to router R2, which then routes those same packets through link L2 to R3. However, this path simply constitutes a separate path for data packets in the event of failure of L1; it does not mean that L1 and L2 are redundant.

² Office Action, pages 3 and 6

Even if links L1 and L2 could properly be considered to be redundant transmission lines (a point that Applicant disputes), claim 1 is still different from the Majd system for at least the following reasons. In Majd, in the event of failure of L1, router R1 routes packets through L3 to router R2 (as explained). Router R2 is configured to identify packets destined for the undersea ("long-haul") network, mark those packets as high priority, and, if necessary, discard packets directed to non-undersea traffic.³ The high priority packets are then routed via link L2 to router R3 and the lower priority (e.g., non-undersea) packets are either routed or dropped.

According to the Office Action, the redundant transmission lines are links L1 and L2. In this case, router R2 would constitute the device that identifies which data packets are low priority and which data packets are high priority (after receiving those data packets from link L3 following a failure in link L1). However, at that point, router R2 does *not* then transmit the high priority data packets via link L2 and transmit the lower priority data packets via link L1 (as would be required by the Office Action interpretation), or vice versa (in fact, it could not, since link L1 is down). Rather, R2 transmits the high priority data packets via link L1 to the undersea boundary router R3 and either (i) discards the low priority data packets, (ii) also transmits the low priority data packets via link L2, or (ii) transmits the low priority data packets via another link (not shown) that is not associated with undersea boundary router R3.

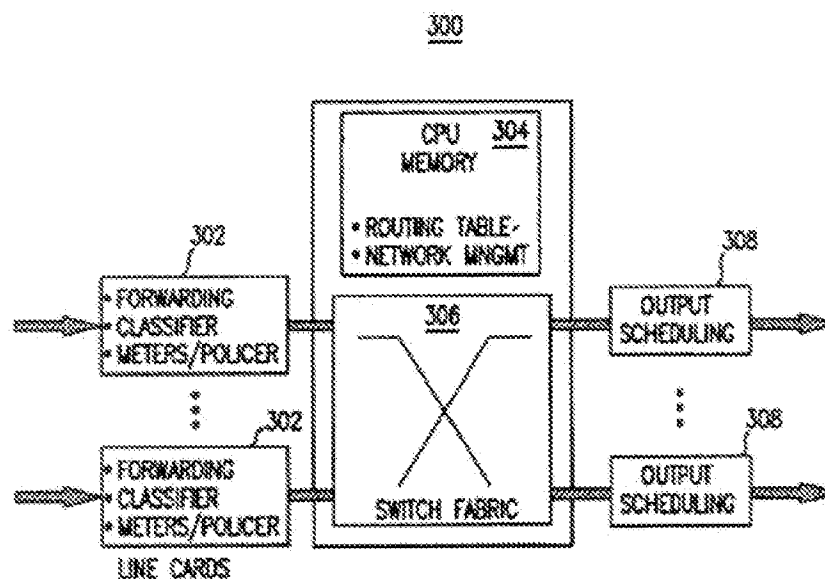
It is noted that the Background section states that an undersea network includes "redundant fiber links".⁴ While that may be true, there is nothing in Majd to suggest that such fiber links are managed according to the method of claim 1. In fact, the arguments presented in

³ Col. 7, lines 1 to 24; col. 9, lines 43 to 46

⁴ Col. 1, line 54

the Office Action do not refer to those fiber links, but rather to networks that provide data packets to an undersea boundary router that supplies those fiber links.

Referring to claim 9, the Office Action refers to module 302 of Fig. 7 (below) as a filter (an example of a device to identify low or high priority data packets).



In this regard, Fig. 7 shows an example of a boundary router 300 (e.g., R3 of Fig. 1). Router R3 is used to direct traffic between different external networks, e.g., ISP1 and ISP2, and the undersea network. The router 300 of Fig. 7 is not router R2, which operates as described above, to route data packets from failed link L1 over link L2. Nevertheless, router 300 does identify high priority data packets and, in some cases, discard low priority data packets.⁵ Data packets are classified in router 300 and then sent to a scheduler 308 that corresponds to a port of a network to which the data packets are destined. Thus, while router 300 does route according to

⁵ Col. 9, lines 1 to 7

priority, there is nothing in Majd to disclose or to suggest that boundary router 300 routes high priority data packets over a first transmission line and low priority data packets over a second transmission line that is redundant to the first transmission line.

Berl was cited for its disclosure of switching high priority data packets from a first TCP session to a second TCP session in the event of failure of the first TCP session. However, Berl is not understood to disclose or to suggest anything that would remedy that foregoing deficiencies of Majd vis-à-vis claim 1. For example, there is no indication in Berl that two, redundant transmission lines are used to transmit high and low priority data packets, respectively, and that the high priority data packets are re-directed to the transmission line that transmits the low priority data packets.

For at least the foregoing reasons, claim 1 is believed to be patentable over Majd and Berl. For at least the same reasons, independent claim 9 is believed to be patentable.

Claim 9 defines a system for use in transmission of data packets, where the data packets comprise packet headers that include priority information, and the priority information identifies the data packets as high priority data packets or as low priority data packets. The system comprises a filter to receive the data packets. The filter is configured to identify which of the data packets are low priority data packets and which of the data packets are high priority data packets based on the priority information, and to output the data packets. A first queue is to receive high priority data packets output by the filter; and a second queue is to receive low priority data packets output by the filter. A switch is configured to direct the high priority data packets from the first queue to a first transmission line, direct the low priority data packets from the second queue to a second transmission line, where the second transmission line is redundant

to the first transmission line, re-direct the high priority data packets from the first queue to the second transmission line if there is a problem on the first transmission line, and discard low priority packets after high priority packets are re-directed to the second transmission line.

As explained above with respect to claim 1, the alleged counterpart to claim 9's filter is module 302 of Majd, Fig. 7. Module 302, however, is part of boundary router 300. As explained above, boundary router 300 does not direct high priority data packets from a first queue to a first transmission line, and direct low priority data packets from a second queue to a second transmission line that is redundant to the first transmission line. Berl is not understood to remedy the foregoing deficiencies of Majd. Accordingly, claim 9 is also believed to be patentable over the art.

Each of the dependent claims is also believed to define patentable features of the invention. Each dependent claim partakes of the novelty of its corresponding independent claim and, as such, has not been discussed specifically herein.

It is believed that all of the pending claims have been addressed. However, the absence of a reply to a specific rejection, issue or comment does not signify agreement with or concession of that rejection, issue or comment. In addition, because the arguments made above may not be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this paper, and the amendment of any claim does not necessarily signify concession of unpatentability of the claim prior to its amendment.

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Client Ref.: 1999P02253WOUS


In view of the foregoing amendments and remarks, Applicant respectfully submits that the application is in condition for allowance, and such action is respectfully requested at the Examiner's earliest convenience.

Applicant's undersigned attorney can be reached at the address shown below. All telephone calls should be directed to the undersigned at 617-521-7896.

No additional fees are believed to be due for this response. However, if any additional fees are due including, but not limited to, claims fees and extension fees, please charge them to deposit account 06-1050, referencing Attorney Docket No. 12758-048US1.

Respectfully submitted,

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